

What is claimed is:

1. A method for performing echo cancellation within a switching center of a communication network, said switching center being coupled to a plurality of local user devices and a plurality of external transmission media, said method comprising

5 the steps of:

providing a pool of echo cancellation units within said switching center;

coupling a first local user device to a first external transmission medium as part of a communication connection  
10 between the first local user device and a remote user device;

determining whether intolerable echo energy is being received from said first external transmission medium during said communication connection; and

allocating a first echo cancellation unit from the pool of  
15 echo cancellation units to the communication connection when intolerable echo energy is detected in said determining step.

2. The method claimed in claim 1, wherein:  
said first external transmission medium includes a trunk.

3. The method claimed in claim 2, wherein:

said first local user device includes a telephone unit  
connected to said switching center via a local loop.

4. The method claimed in claim 3, wherein:

said step of coupling includes providing a communication path between said telephone unit and said trunk.

5. The method claimed in claim 1, wherein:

said step of determining includes receiving a signal from  
said first local user device indicating that echoes are being  
audibly perceived by a user thereof.

6. The method claimed in claim 1, wherein:

said step of determining includes allocating a call classifier to said communication connection and receiving an indication from said call classifier that echoes above a predetermined power level are being received from said first external transmission medium.

7. The method claimed in claim 1, wherein:

said step of determining includes assigning an echo cancellation unit to said communication connection and receiving an indication from said echo cancellation unit that echoes above

5 a predetermined power level are being received from said first external transmission medium; and

said step of allocating includes allowing said echo cancellation unit to continue performing echo cancellation for said communication connection for the duration thereof.

8. The method claimed in claim 1, wherein:

said pool of echo cancellation units includes at least one multi-channel hardware echo cancellation device.

9. The method claimed in claim 1, wherein:

said pool of echo cancellation units includes a programmable digital processing device.

10. The method claimed in claim 1, further comprising the step of:

releasing said first echo cancellation unit back to said pool when said communication connection has ended.

11. A switching center for use within a communication network, comprising:

a plurality of first ports for use in coupling the switching center to a plurality of local user devices;

5 a plurality of second ports for use in coupling the switching center to a plurality of external transmission media, each of said plurality of external transmission media being coupled at an opposite end to another switching center within the communication network;

10 a switch for selectively coupling individual first ports to individual second ports within the switching center for use in establishing communication connections between local user devices and remote user devices in the communication network;

a pool of echo cancellation units that are each capable of  
15 reducing echoes received by said switching center from an external transmission medium; and

an allocation unit for allocating an echo cancellation unit from said pool of echo cancellation units to a communication connection being supported by the switching center in response  
20 to detection of intolerable echo energy from an external transmission medium associated with said communication connection.

12. The switching center of claim 11, wherein:

said plurality of external transmission media include a plurality of trunks.

13. The switching center of claim 11, wherein:

said communication network includes a conventional telephony network.

14. The switching center of claim 11, wherein:

said pool of echo cancellation units includes a plurality of individual hardware units.

15. The switching center of claim 11, wherein:

said allocation unit includes at least one call classifier for detecting echoes associated with a communication connection.

16. A switching center for use in a communication network to provide switching services between a plurality of local user devices and a plurality of trunks, comprising:

means for selectively coupling a first local user device in  
5 the plurality of local user devices to a first trunk in the plurality of trunks in response to a request for a communication connection between said first local user device and a remote user device;

means for detecting signal echoes being received from said  
10 first trunk during said communication connection; and

means for allocating echo cancellation functionality to said communication connection when signal echoes having greater than a predetermined magnitude are detected by said means for detecting.

17. The switching center claimed in claim 16, wherein:

said means for detecting signal echoes includes a call classifier unit.

18. The switching center claimed in claim 16, wherein:

said means for detecting signal echoes includes means for receiving a signal from said first local user device indicating that signal echoes have been audibly perceived by a user of said  
5 first local user device.

19. The switching center claimed in claim 16, wherein:

said means for detecting signal echoes includes an echo cancellation unit.

20. The switching center claimed in claim 16, wherein:

said means for allocating includes a pool of echo cancellation units.